

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for manufacturing smart cards, each having an antenna with ends or connection pads for connection to an electronic module, comprising the following steps:

producing, on a support sheet, the antenna with at least two turns and a pair of connection pads ~~that in a layout in which no turns of the antenna are both~~ disposed ~~on the support sheet on a common side of said antenna turns~~ between the pair of connection pads, and electrically connecting at least one of the ends of the antenna to a respective one of said connection pads by means of a bridge disposed on a surface of said turns that is away from said support sheet.

2. (Previously Presented) A method according to Claim 1, wherein the bridge is produced by covering the turns of the antenna with an insulating layer in one zone and depositing on this insulating layer a conductive element so that one end of the antenna can be connected to one connection pad.

3. (Canceled)

4. (Previously Presented) A method according to claim 1, further comprising the following steps:

assembling the support sheet to plastic foils to form a card body,
machining a cavity and connection recesses in an upper face of the card body, so that the machined plane of the cavity is situated below the plane of the connection pads of the antenna, and the connection recesses are situated above the connection pads of the antenna in order to expose said pads, and

fixing an electronic module into the cavity, the module having on its lower side, facing towards the inside of the cavity, conductive pads in electrical contact with the connection pads of the antenna by means of a conductive linking element located in the connection recesses.

5. (Canceled)

6. (Withdrawn) A method according to claim 4, wherein the support sheet is located between the plastic foils so as to form the neutral axis of the card.

7. (Withdrawn) A method according to claim 1, wherein the antenna is produced by incrustation on the support sheet.

8. (Withdrawn) A method according to claim 1, wherein the connection pads are produced in a zigzag pattern.

9. (Withdrawn) A method according to claim 4, wherein the machining of the connection recesses is carried out through the connection pads of the antenna.

10. (Withdrawn) A method according to claim 4, wherein the connection recesses are diametrically opposite each other and are situated on a mid-perpendicular of the cavity.

11. (Withdrawn) A method according to claim 4, wherein the connection recesses are situated side-by-side and on either side of a mid-perpendicular of the cavity.

12. (Withdrawn) A method according to claim 1, wherein the electronic module comprises an integrated circuit microchip and a single-sided printed circuit having flush contact zones defined by an ISO standard, and wherein said pads are located outside the contact zones defined by the ISO standard.

13. (Previously Presented) A method according to claim 4, wherein the electronic module comprises an integrated circuit microchip and a double-sided printed circuit without conductive paths between its two faces, the double-sided circuit comprising an insulating foil having on one face a first set of conductive pads that form access contacts for the smart card, and on the other face a second set of conductive pads that are connected to the antenna, and wherein said connection pads comprise contact zones located on the same side of the cavity and on either side of a mid-perpendicular of this cavity, or on a mid-perpendicular of the cavity on two opposite sides, each said contact zone being extended by a track with its edge parallel to the electronic module.

14. (Previously Presented) A method according to claim 1, wherein the connection between the connection pads of the antenna and the module is formed by a solder with a low melting point.

15. (Previously Presented) A method according to Claim 14, wherein the solder comprises an alloy with a basis of indium and tin.

16. (Previously Presented) A method according to claim 14, wherein the solder comprises not more than 52% by weight of indium and 48% by weight of tin.

17. (Previously Presented) A method according to Claim 14, wherein the solder comprises an alloy with a basis of bismuth, tin and lead.

18. (Previously Presented) A method according to Claim 17, wherein the solder comprises not more than 46% by weight of bismuth, 34% by weight of tin and 20% by weight of lead.

19. (Previously Presented) A method according to Claim 14, wherein the solder comprises an alloy with a basis of bismuth, tin and indium.

20. (Previously Presented) A method according to Claim 19, wherein the solder comprises not more than 57% by weight of bismuth, 26% by weight of indium and 17% by weight of tin.

21. (Previously Presented) A method according to claim 1, wherein the connection between the connection pads of the antenna and of the module is formed by means of a grease charged with metallic particles.

22. (Previously Presented) A method according to claim 1, wherein the connection between the connection pads of the antenna and the module is formed by means of a silicon gasket charged with metallic particles.

23. (Previously Presented) A method according to claim 1, further including the step of depositing balls of gold by thermo compression on the module in order to increase the bonding surface between the module and the antenna.

24. (Previously Presented) A method according to claim 2, further comprising the following steps:

assembling the support sheet to plastic foils to form a card body;

machining cavity and connection recesses in an upper face of the card body, so that the machined plane of the cavity is situated below the plane of the connection pads of the antenna, and the connection recesses are situated above the connection pads of the antenna in order to expose said pads; and

fixing an electronic module into the cavity, the module having on its lower side, facing towards the inside of the cavity, conductive pads in electrical contact with the connection pads of the antenna by means of a conductive linking element located in the connection recesses.

25. (Canceled)

26. (Canceled)

27. (Withdrawn) Manufacturing method according to claim 20, wherein the connection between the connection pads of the antenna and the conductive pads of the module (M) is formed by means of a grease charged with metallic particles.

28. (Canceled)

29. (Withdrawn) Manufacturing method according to claim 20, wherein the connection between the connection pads of the antenna and the conductive pads of the module (M) is formed by means of a silicon gasket charged with metallic particles.

30 - 44. (Canceled)

45. (Previously Presented) A method for manufacturing smart cards, comprising the following steps:

producing, on a support sheet, an antenna with at least two turns, a pair of connection pads that are both disposed on a common side of said antenna turns, an insulator disposed across said turns, and a connective link on said insulator that connects the opposite side of said turns to one of said connection pads;

laminating the support sheet to plastic foils to form a card body;

machining a cavity in one face of the card body, to expose said connection pads; and

fixing an integrated circuit chip into the cavity such that conductive pads on the lower side of the chip, facing towards the inside of the cavity, are in electrical contact with the connection pads of the antenna.

46. (Previously Presented) The method of claim 45 wherein said integrated circuit chip is disposed within a module having conductors on one side for connecting said chip to said connection pads, and conductors on the opposite side that provide access to the smart card.

47. (Currently Amended) A method for manufacturing a sheet support having an antenna with a pair of ends or pads for connection to an electronic chip, comprising producing, on a face of a support sheet, at least two turns of the antenna and a pair of ends or pads, wherein a conductive segment crosses over at least one turn of the at least two turns ~~without creating a short circuit~~ while being electrically insulated from the at least one turn of the at least two turns.

48. (Previously Presented) The method for manufacturing a sheet support of claim 47, wherein the antenna is produced by incrustation on the support sheet.

49. (Previously Presented) The method for manufacturing a sheet support of claim 47, wherein the sheet support is a smart card.

50. (Previously Presented) The method for manufacturing a sheet support of claim 47, further comprising producing an insulating bridge on the face of the support sheet where the conductive segment crosses over at least one turn of the at least two turns.

51. (Canceled)

52. (Previously Presented) A method for making an assembly of sheets including an antenna with two ends and an electronic chip, comprising:

producing, on a support sheet, the antenna including at least two turns and a conductive element electrically insulated from the turns and crossing over or under at least one turn of the at least two turns; and

forming an assembly of sheets including the support sheet and a cavity in one side of the assembly of sheets, an electronic chip being attached in the cavity, the chip having conductor pads in electrical contact with the antenna ends.

53. (Previously Presented) The method according to Claim 52, wherein the cavity includes connection recesses communicating with the cavity.

54. (Currently Amended) A method for manufacturing a sheet assembly comprising an antenna connected to a chip, the method comprising producing, on a face of a support sheet, at least two turns of the antenna with a pair of ends or pads for electrically connecting the chip, wherein a conductive segment crosses over at

least one turn of the at least two turns ~~without creating a short circuit~~ while being electrically insulated from the at least one turn of the at least two turns.

55. (Currently Amended) A method for manufacturing a sheet support having an antenna with a pair of ends or pads for connection to an electronic chip, comprising producing, on a face of a support sheet, at least two turns of the antenna and a pair of ends or pads, wherein a conductive segment crosses over at least one turn of the at least two turns ~~without creating a short circuit~~ while being electrically insulated from the at least one turn of the at least two turns so that both ends or pads are on a common side of the at least two turns.

56. (Previously Presented) A method for making a sheet assembly including an antenna with two ends or pads and an electronic chip, comprising:
producing, on a support sheet, at least two turns of the antenna and a conductive element electrically insulated from the turns and crossing over or under at least one turn of the at least two turns; and
forming a sheet assembly including the support sheet and a chip housing and/or holes for containing and/or connecting the electronic chip to the antenna through the housing and/or the holes.